AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the Application. Deletions are ~~strikethrough~~ and additions are underlined.

1-147. (Canceled)

148. (Previously presented) A method of encapsulation comprising the steps of:

(a) creating a microcapsule within which is encapsulated at least one cell,

(b) coating the microcapsule with a photoinitiator,

(c) placing the microcapsule in an aqueous macromer solution comprised of macromer,

(d) exposing the aqueous macromer solution containing the microcapsule to light radiation,

(e) polymerizing the aqueous macromer solution, and

forming a macrocapsule containing at least one microcapsule with at least one cell.

149. (Previously presented) The method of claim 148, further comprising a step of coating the microcapsule with poly(L-lysine), between step (a) and step (b).

150. (Previously presented) The method of claim 148, wherein the cell is an eukaryote cell.

151. (Previously presented) The method of claim 150, wherein the eukaryote cell is a mammalian cell.

152-181. (Canceled)

182. (New) The method of claim 148, wherein the macrocapsule is a conformal coated microcapsule.

183. (New) The method of claim 151, wherein the mammalian cell is a Human cell.

184. (New) The method of claim 148, wherein the photoinitiator is any dye that absorbs light having a frequency between 320 nm and 900 nm, can form free radicals, is at least partially water soluble, and is non-toxic to the at least one cell at the concentration used for polymerization.

185. (New) The method of claim 184, wherein the photoinitiator is selected from the group of ethyl eosin, eosin Y, fluorescein, 2, 2-dimethoxy, 2-phenylacetophenone, 2-methyl, 2-phenylacetonphenone, camphorquinone, rose bengal, methylene blue, erythrosin, phloxine, thionine, riboflavin, and methyl green.

186. (New) The method of claim 148, wherein the macromer solution further comprises a primary, secondary, tertiary, or quaternary amine cocatalyst.

187. (New) The method of claim 148, wherein the microcapsule is comprised of material selected from the group consisting of alginate, chitosan, agarose, gelatin, hyaluronic acid, chondroitin sulfate, dextran, dextran sulfate, heparin, heparin sulfate, heparan sulfate, gellan gum, xanthan gum, guar gum, water soluble cellulose derivatives and carrageenan.

188. (New) The method of claim 148, wherein the macromer solution further comprises an accelerator to increase the rate of polymerization.

189. (New) The method of claim 148, wherein the macromer is a water soluble, ethylenically unsaturated, polymer susceptible to polymerization into a water insoluble polymer through interaction of at least two carbon-carbon double bonds.

190. (New) The method of claim 189, wherein the macromer is selected from the group consisting of ethylenically unsaturated derivatives of poly(ethylene oxide) (PEO), poly(ethylene glycol) (PEG), poly(vinyl alcohol) (PVA), poly(vinylpyrrolidone) (PVP), poly(ethyloxazoline) (PEOX), poly(amino acids), polysaccharides, and proteins.

191. (New) The method of claim 190, wherein the macromer is PEG tetraacrylate.

192. (New) The method of claim 190, wherein the polysaccharide is selected from the group consisting of alginate, hyaluronic acid, chondroitin sulfate, dextran, dextran sulfate, heparin, heparin sulfate, heparan sulfate, chitosan, gellan gum, xanthan gum, guar gum, water soluble cellulose derivatives and carrageenan.

193. (New) The method of claim 190, wherein the protein is selected from the group consisting of gelatin, collagen, and albumin.

194. (New) A method of encapsulation comprising the steps of:

(a) creating a microcapsule within which is encapsulated at least one aggregation of cells,

(b) coating the microcapsule with a photoinitiator,

(c) placing the microcapsule in an aqueous macromer solution comprised of macromer,

(d) exposing the aqueous macromer solution containing the microcapsule to light radiation,

(e) polymerizing the aqueous macromer solution, and

forming a macrocapsule containing at least one microcapsule with at least one aggregation of cells.

195. (New) The method of claim 194, further comprising a step of coating the microcapsule with poly(L-lysine), between step (a) and step (b).

196. (New) The method of claim 194, wherein the macrocapsule is a conformal coated microcapsule.

197. (New) The method of claim 194, wherein the cell is an eukaryote cell.

198. (New) The method of claim 197, wherein the eukaryote cell is a mammalian cell.

199. (New) The method of claim 198, wherein the mammalian cell is a Human cell.

200. (New) The method of claim 194, wherein the photoinitiator is any dye that absorbs light having a frequency between 320 nm and 900 nm, can form free radicals, is at least partially water soluble, and is non-toxic to the at least one aggregation of cells at the concentration used for polymerization.

201. (New) The method of claim 200, wherein the photoinitiator is selected from the group of ethyl eosin, eosin Y, fluorescein, 2, 2-dimethoxy, 2-phenylacetophenone, 2-methyl, 2-phenylacetonphenone, camphorquinone, rose bengal, methylene blue, erythrosin, phloxine, thionine, riboflavin, and methyl green.

202. (New) The method of claim 194, wherein the macromer solution further comprises a primary, secondary, tertiary, or quaternary amine cocatalyst.

203. (New) The method of claim 194, wherein the microcapsule is comprised of material selected from the group consisting of alginate, chitosan, agarose, gelatin, hyaluronic acid, chondroitin sulfate, dextran, dextran sulfate, heparin, heparin sulfate, heparan sulfate, gellan gum, xanthan gum, guar gum, water soluble cellulose derivatives and carrageenan.

204. (New) The method of claim 194, wherein the macromer solution further comprises an accelerator to increase the rate of polymerization.

205. (New) The method of claim 194, wherein the macromer is a water soluble, ethylenically unsaturated, polymer susceptible to polymerization into a water insoluble polymer through interaction of at least two carbon-carbon double bonds.

206. (New) The method of claim 205, wherein the macromer is selected from the group consisting of ethylenically unsaturated derivatives of poly(ethylene oxide) (PEO), poly(ethylene glycol) (PEG), poly(vinyl alcohol) (PVA), poly(vinylpyrrolidone) (PVP), poly(ethyloxazoline) (PEOX), poly(amino acids), polysaccharides, and proteins.

207. (New) The method of claim 206, wherein the macromer is PEG tetraacrylate.

208. (New) The method of claim 206, wherein the polysaccharide is selected from the group consisting of alginate, hyaluronic acid, chondroitin sulfate, dextran, dextran sulfate, heparin, heparin sulfate, heparan sulfate, chitosan, gellan gum, xanthan gum, guar gum, water soluble cellulose derivatives and carrageenan.

209. (New) The method of claim 206, wherein the protein is selected from the group consisting of gelatin, collagen, and albumin.

210. (New) A method of encapsulation comprising the steps of:

(a) creating a microcapsule within which is encapsulated at least one islet,

(b) coating the microcapsule with a photoinitiator,

(c) placing the microcapsule in an aqueous macromer solution comprised of macromer,

(d) exposing the aqueous macromer solution containing the microcapsule to light radiation,

(e) polymerizing the aqueous macromer solution, and

forming a macrocapsule containing at least one microcapsule with at least one islet.

211. (New) The method of claim 210, further comprising a step of coating the microcapsule with poly(L-lysine), between step (a) and step (b).

212. (New) The method of claim 210, wherein the macrocapsule is a conformal coated microcapsule.

213. (New) The method of claim 210, wherein the cell is an eukaryote cell.

214. (New) The method of claim 213, wherein the eukaryote cell is a mammalian cell.

215. (New) The method of claim 214, wherein the mammalian cell is a Human cell.

216. (New) The method of claim 210, wherein the photoinitiator is any dye that absorbs light having a frequency between 320 nm and 900 nm, can form free radicals, is at least partially water soluble, and is non-toxic to the at least one islet at the concentration used for polymerization.

217. (New) The method of claim 216, wherein the photoinitiator is selected from the group of ethyl eosin, eosin Y, fluorescein, 2, 2-dimethoxy, 2-phenylacetophenone, 2-methyl, 2-phenylacetonphenone, camphorquinone, rose bengal, methylene blue, erythrosin, phloxine, thionine, riboflavin, and methyl green.

218. (New) The method of claim 210, wherein the macromer solution further comprises a primary, secondary, tertiary, or quaternary amine cocatalyst.

219. (New) The method of claim 210, wherein the microcapsule is comprised of material selected from the group consisting of alginate, chitosan, agarose, gelatin, hyaluronic acid, chondroitin sulfate, dextran, dextran sulfate, heparin, heparin sulfate, heparan sulfate, gellan gum, xanthan gum, guar gum, water soluble cellulose derivatives and carrageenan.

220. (New) The method of claim 210, wherein the macromer solution further comprises an accelerator to increase the rate of polymerization.

221. (New) The method of claim 210, wherein the macromer is a water soluble, ethylenically unsaturated, polymer susceptible to polymerization into a water insoluble polymer through interaction of at least two carbon-carbon double bonds.

222. (New) The method of claim 221, wherein the macromer is selected from the group consisting of ethylenically unsaturated derivatives of poly(ethylene oxide) (PEO), poly(ethylene glycol) (PEG), poly(vinyl alcohol) (PVA), poly(vinylpyrrolidone) (PVP), poly(ethyloxazoline) (PEOX), poly(amino acids), polysaccharides, and proteins.

223. (New) The method of claim 222, wherein the macromer is PEG tetraacrylate.

224. (New) The method of claim 222, wherein the polysaccharide is selected from the group consisting of alginate, hyaluronic acid, chondroitin sulfate, dextran, dextran sulfate, heparin, heparin sulfate, heparan sulfate, chitosan, gellan gum, xanthan gum, guar gum, water soluble cellulose derivatives and carrageenan.

225. (New) The method of claim 222, wherein the protein is selected from the group consisting of gelatin, collagen, and albumin.